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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/039,947 | 10/25/2001 | Robert C. Moore | SD6858 | 8459 |
| 20567 | 7590 | 06/01/2005 | EXAMINER | |
| SANDIA CORPORATION P O BOX 5800 MS-0161 ALBUQUERQUE, NM 87185-0161 | | | CINTINS, IVARS C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1724 | |

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/039,947

Applicant(s)

MOORE ET AL.

Examiner

Ivars C. Cintins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-30, 32-37, 39-43, 46-54 and 56-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-22, 30, 34-37, 39-43, 46-52, 54 and 56-65 is/are allowed.
- 6) ☒ Claim(s) 23-29, 32, 33, 53 and 66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23, 26 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Galbacs et al. publication entitled "Removal of the Arsenic Content of Drinking Water" or the Galbacs et al. publication entitled "Ammonia Removal From Sewage Waters By Magnesium Salts" in view of Vempati (U.S. Patent No. 6,790,363). Each of the Galbacs et al. publications discloses removing arsenic from water with magnesium hydroxide and/or magnesium oxide which converts to magnesium hydroxide. Accordingly, each of these publications discloses the claimed invention with the exception of the recited carrier. Vempati discloses coating an arsenic adsorbent onto a carrier particle; and it would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the magnesium hydroxide and/or magnesium oxide of either primary reference onto a similar carrier material, in order to facilitate its handling.

Claims 23, 24, 25, 28, 29 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Galbacs et al. publication entitled "Removal of the Arsenic Content of Drinking Water" or the Galbacs et al. publication entitled "Ammonia Removal From Sewage Waters By Magnesium Salts" in view of Johnson et al. (U.S. Patent No. 6,656,587). Each of the Galbacs et al. publications discloses removing arsenic from water with magnesium hydroxide and/or magnesium oxide which converts to magnesium hydroxide. Accordingly, each of these publications discloses the claimed invention with the exception of the recited carrier. Johnson et al. discloses coating an adsorbent material onto a buoyant magnetic carrier particle. This

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reference further teaches that the buoyant material can include polystyrene (see col. 4, line 49).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the magnesium hydroxide and/or magnesium oxide of either primary reference onto a carrier material of the type disclosed by Johnson et al., in order to facilitate its handling.

Claims 23, 26, 27 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Galbacs et al. publication entitled "Removal of the Arsenic Content of Drinking Water" or the Galbacs et al. publication entitled "Ammonia Removal From Sewage Waters By Magnesium Salts" in view of D'Alelio (U.S. Patent No. 2,340,111). Each of the Galbacs et al. publications discloses removing arsenic from water with magnesium hydroxide and/or magnesium oxide which converts to magnesium hydroxide. Accordingly, each of these publications discloses the claimed invention with the exception of the recited carrier. D'Alelio discloses coating an adsorbent material onto a carrier particle such as sand or glass in order to increase the effective surface area of this adsorbent (see page 3, right column, lines 17, 18 and 24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the magnesium hydroxide and/or magnesium oxide of either primary reference onto a carrier material of the type disclosed by D'Alelio, in order to obtain the advantages disclosed by this secondary reference for the system of either primary reference.

Claims 32 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of the Galbacs et al. publication entitled "Removal of the Arsenic Content of Drinking Water." Applicant has admitted that drinking water is known to contain carbonate ions at a concentration greater than 150 ppm (see page 5, lines 18-19 of the specification). The above noted Galbacs et al. publication teaches purifying drinking water by

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contacting it with magnesium hydroxide and/or magnesium oxide for 5 to 10 minutes (see line 4 of the "Conclusion" section of this document). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to treat the admittedly known drinking water by the process of the Galbacs et al. publication, in order to remove any arsenic contained in this drinking water.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Galbacs et al. publication entitled "Removal of the Arsenic Content of Drinking Water" or the Galbacs et al. publication entitled "Ammonia Removal From Sewage Waters By Magnesium Salts" in view of Khandaker et al. (U.S. Patent No. 6,802,980). Each of the Galbacs et al. publications discloses removing arsenic from water with magnesium hydroxide and/or magnesium oxide which converts to magnesium hydroxide. Accordingly, each of these publications discloses the claimed invention with the exception of the recited softening treatment. Khandaker et al. teaches that arsenic removal in conjunction with lime softening is known; and it would have been obvious to one of ordinary skill in the art at the time the invention was made provide the arsenic removal process of either primary reference with the lime softening (i.e. calcium carbonate precipitation) treatment of Khandaker et al. (see col. 2, lines 26-28), in order to obtain the advantages disclosed by this secondary reference for the system of either primary reference.

Claims 2-22, 30, 34-37, 39-43, 46-52, 54 and 56-65 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is (571) 272-1155. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If

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attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr.

Duane Smith, can be reached at (571) 272-1166.

The centralized facsimile number for the USPTO is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ivars C. Cintins
Primary Examiner
Art Unit 1724

I. Cintins
May 29, 2005